EVALUATION OF THE ROLE OF NURSING INSTITUTIONS IN THE IMPLEMENTATION OF PATIENT SAFETY BY NURSING STUDENTS IN 21st CENTURY: LITERATURE REVIEW

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Abstract

Students' knowledge of the concept of patient safety in infection prevention and control and treatment safety is still low. Real-life problem-based learning approaches in the area of clinical education assist in patient safety education. This study was designed to identify, evaluate and summarize available evidence on the effectiveness of clinical education on student achievement of patient safety competencies. The Methode that use in this study is systematic review. Search for articles in research journals obtained from Sciencedirect, Ebscohost, Garuda, Proquest and Scopus. As many as 228 articles were obtained consisting of nursing journals and health journals with the keywords clinical education, competence, and patient safety. After that, the screening process was carried out based on the inclusion criteria and obtained 25 articles that met the criteria. The result of this study are the contribution of educational institutions in the achievement of patient safety competencies for nursing students is still low and the achievement of patient safety competencies for students at the professional level is better than for students who are still learning theory in educational institutions. The conclusion of this study is clinical education carried out by educational institutions is considered ineffective in achieving the competence of patient safety for nursing students. Therefore, it is necessary to develop a patient safety model or curriculum that is attached to clinical education in nursing education institutions

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Key Word: *nursing student, patient safety, clinical education, educational institutions*

INTRODUCTION

Patient safety incidents are still a trend of global problems in health service delivery (1). Patient safety problems caused by nursing students can have various adverse effects on patients. This condition encourages educational institutions and students in them to play a role in reducing patient safety incidents (2).

Educational institutions become a gateway for students to contribute to patient safety standard programs (3). Nursing educational institutions play a role in instilling a learning process that teaches patient safety materials (4). Educational institutions have a major role in securing patient safety in complex health care environments(5). In this role, nursing education institutions include patient safety curricula in their educational curricula (6). Students and health education institutions play a role in improving the knowledge base, skills, behaviors, and attitudes that are

relevant to patient safety (7). Knowledge, skills, behavior, and attitudes are factors that influence the application of patient safety (8).

The role of students and nursing education institutions in patient safety that is not optimal will cause an impact or problem on patient safety (9). (7) notes that students' knowledge of the concept of patient safety in infection prevention and control and treatment safety is still low. (1) mentions that a problem-based learning approach in real life in the area of clinical education helps in patient safety education. (10) explained that knowledge management-based patient safety models can improve the competence of nursing students. (11) sees that curriculum changes in educational institutions can be carried out, one of which is through a practical community-based knowledge management approach (12) dan (13). Knowledge management provides better practice experience and patient safety competencies for nurses (14) dan (15).

The aim of the study and research questions

Research that evaluates clinical education in educational institutions in improving patient safety competence in nursing students is still lacking. Based on the background of this problem, it is necessary to carry out further research on the implementation of patient safety implementation by students in health services. This systematic review was conducted to identify, evaluate how students perform patient safety and to pinpoint gaps in the study. The specific research question is how the effectiveness of clinical education in the achievement of patient safety competencies for nursing students?

RESEARCH METHODS

Search strategy and inclusion criteria

The literature search was started by using the keywords clinical education, patient safety, nurse student, community of practice. The databases used were Sciencedirect, Ebsco, Garuda, Proquest and Scopus with inclusion criteria, namely searches limited to full text from 2019 to 2021.

Search result

Obtained articles as many as 228 literature sources, 57 sources from Ebscohost, 27 from Garuda, 69 from Proquest, 39 sources from Science Direct, and 36 sources from Scopus. Several articles are then screened, namely by reading at the core of the journal, focusing on the topic, the suitability of the journal content, the suitability of known sources from the abstract, keywords, introduction, and conclusion. In the end, we obtained 25 articles used in this literature review.

Design

This systematic review was carried out in the following steps based on the PRISMA guidelines, namely (1) formulating research questions, (2) selecting relevant search terms and formulating search phrases in consultation with information specialists in the health sciences, (3) planning a search strategy, (4) agreed on the inclusion and exclusion criteria, (5) conducted a systematic search in electronic databases, (6) selected eligible research articles and (7) conducted a quality assessment of the studies selected for review.
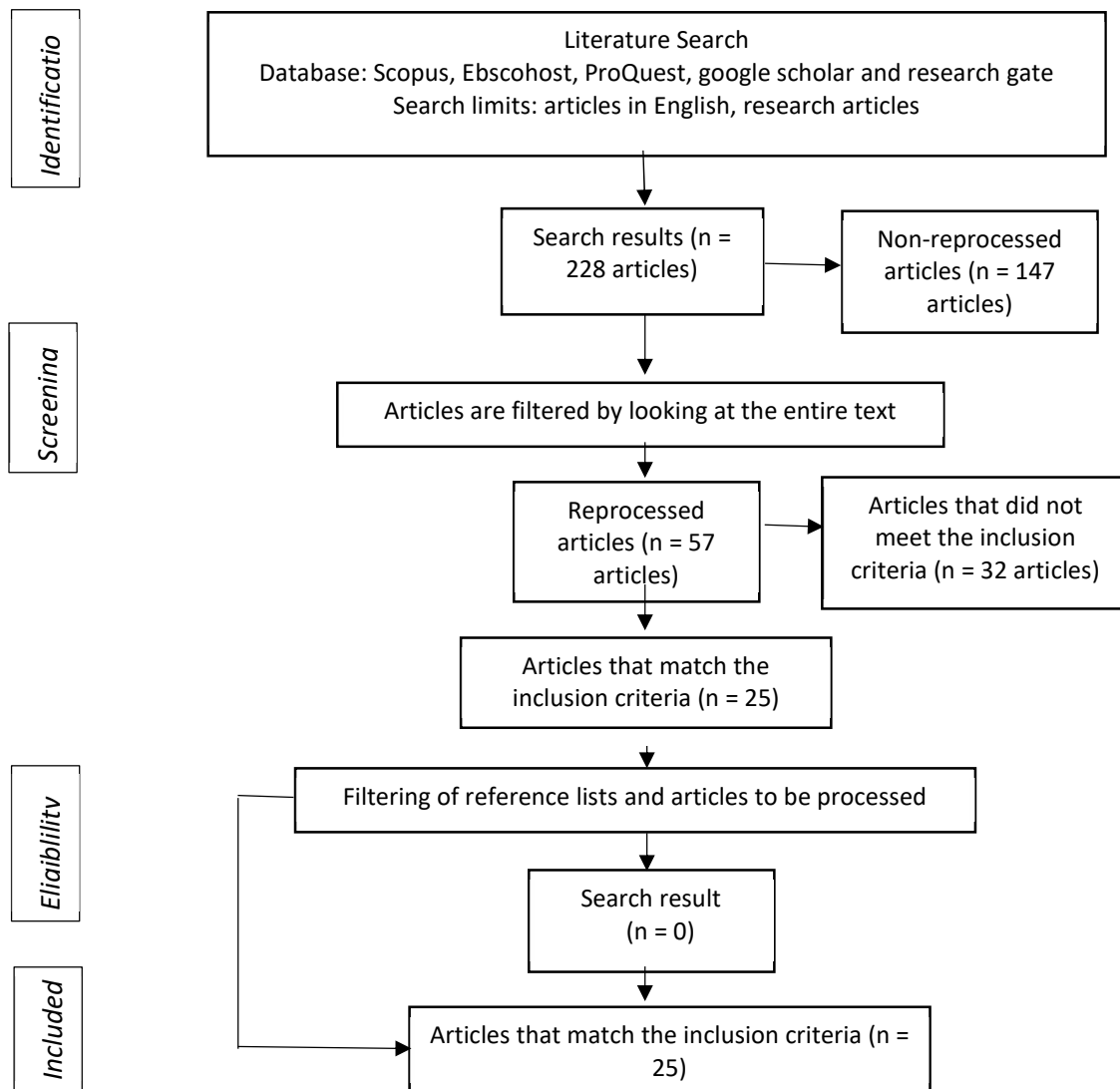
Figure 1. PRISMA Flow Chart *(Moher et al. 2009)*

Data Extraction

The following characteristics of each study were extracted; authors, publication year, aim of the study, sample size, method, outcomes and conclusion (Table 2). The methods in each article were identified, categorized into themes, summarized, and synthesized systematically.

Table 2.

NO	Author, years	Aim	Research Design	Sample size	Instrument	Result	Conclusion
1	(7)	The overarching objective of this study was to examinefinal year nursing students' levels of knowledge about key patient safety concepts.	Crossectional study	1981 nursing students from 23 educational institutions	Questionnaire	In total, 2011final year nursing students from 23 educational institutions completed the quiz. Mean quiz scores were 29.35/45 or 65.23% (SD 5.63). Participants achieved highest scores in the domains of personcentred care and therapeutic communication, and lowest scores for infection prevention and control and medication safety	Given the pivotal role that nurses play in maintaining patient safety, the results from this quiz raise important questions about the preparation of nursing students for safe and effective clinical practice. The institutional results also suggest the need for increased curricula attention to patient safety.
2	(1)	This study aimed to assess students' evaluation of patients' safety education in their curriculum	Crosssectionalstudy	338 Students	Questionnaire	As stated by 33.40% of medical interns and 51.10% of nursing students, patients safety education was given as a chapter of a course. On the contrary, 48.20% of midwifery and 32.10% of health officer students stated that it was given as a small portion in a chapter in their curriculum. Almost 60% of students of all professional categories self‑reported that their average level of knowledge on the patients' safety rested between "fair" and "poor." Likewise, more than half of students of all professional categories had a "neutral" to "disagree"	Patients safety education has been given less emphasis. Students also self‑reported that their average level of knowledge was low. Real‑life examples and problem‑based Learning approaches were preferred learning methods among most of the students.

					level of attitude for attitude items. Concerning teaching methods, most students preferred real‑life examples and problem‑based learning approaches as helpful in patients' safety education.	
3	(16)	To assess the perceived patient safety competence during clinical training of Saudi baccalaureate nursing students in six universitie	Descriptive, crossectional design.	829 nursing students	Questionnaire	The percentage of agreement on the items of the health professional education in patient safety survey ranged from 61.5%–76.5%. The dimension "understanding human and environmental factors" received the highest perceived competence, whereas the dimension "working in teams" received the lowest competence. Significant differences in students' patient safety competence from different universities were reported. Male students perceived their competence in "working in teams" higher than the female students. Students in their internship year had significantly higher levels of competence in all the six dimensions of the health professional education in patient safety survey than students in the third and fourth-year levels.	Saudi nursing students have positive perceptions towards their patient safety competencies. Significant differences were found in the patient safety competence of nursing students between universities, gender and year of study
4	(9)	Assessing the strengths and weaknesses of	cross-sectional	732 Chinese undergraduate nursing students	Questionnaire	Chinese undergraduate nursing students were fairly confident in their clinical safety skills but less confident in what they learned about	The results of this study provide a better understanding of PS competence among final-year

		Chinese nursing students' PS competence and identifying the influencing factors.				sociocultural or context-dependent aspects of PS and speaking up about PS, including effective communication and understanding human and environmental factors. We observed significant differences in PS competence between students from different regions, across different PS learning styles (self-study and classroom theoretical study), with different self-assessed PS competence levels, and with experiences of adverse events ($p < 0.05$). These factors accounted for almost 15% of the total variance in PS competence scores (adjusted R 2 = 0.15,$p = 0.00$).	nursing students in China. Our findings may help nursing educators or healthcare organizations to cultivate and improve PS competence by establishing documented policies or by improving the efficacy of intervention.
5	(17)	This study investigated how patient safety is currently taught in pre-registration nursing programmes across South Korea and explored nurse educators' perspectives on curriculum change.	Descriptive study	80 nurse educators working in 16 regions throughout Korea.	A paper-and-pencil survey	A little consistency was found in approaches to teaching patient safety. Patient safety topics are addressed throughout various nursing courses, and patient safety education is limited in hours of instruction and breadth of content. A majority of respondents indicated that additional supports are needed, including a national standardized curriculum for patient safety education.	A new approach to teaching patient safety is needed in Korean pre-registration nursing education. Overall, patient safety education is limited and provided through a fragmented approach with little attention to systems, workplace design or human issues that are necessary for developing the critical reasoning and skills to support patient safety.

RESULTS

Characteristics Study

In this systematic review, there were 6 articles that were included, namely cross sectional research. These articles were published from 2019 to 2021 in several countries. Respondents for research articles were nursing students with a total sample of 80-1981.

Several studies have shown that the contribution of educational institutions in the achievement of patient safety competencies in nursing students is still low. It is known from several studies analyzed that as many as 60% of student interns self-reported that their average level of knowledge on the patients' safety rested between "fair" and "poor." (1). Knowledge of patient safety in 23 educational institutions is also known to be low. From an average score of 65.23%, the lowest score is on infection prevention and control and medication safety (7).

The achievement of student patient safety competencies at the professional level is better than students who are still learning theory in educational institutions. As many as 61.5% -76.5% of apprentices agree that there is patient safety material for professional education students (16).

Significant differences in PS competence between students from different regions, across different PS learning styles (self-study and classroom theoretical study), with different self-assessed PS competence levels, and with experiences of adverse events (p <0.05). These factors accounted for almost 15% of the total variance in PS competence scores (adjusted R2 = 0.15, p = 0.00) (9).

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DISCUSSION

This systematic review aims to identify the effectiveness of clinical education in achieving nursing student patient safety competencies. There are 5 articles reviewed with intervention research using GPA research design. The transfer of patient safety knowledge carried out by educational institutions to nursing students is preferably a problem-based learning approach. Most students prefer real-life examples and problem-based learning approaches as helpful in patient safety education (1).

The findings of this review indicate that educational institutions have contributed to the conceptualization and understanding of patient safety standards in students. However, this contribution has not been effective in achieving the patient safety competencies of nursing students as in findings (7). Educational institutions are expected to support patient safety programs for students from the first semester to the practice site. Patient safety curriculum reforms made during education are made countinity at every level ranging from undergradute student to nursing internship.

It is also hoped that the material in the patient safety curriculum in educational institutions is made broader to cover all patient safety standards (7). Extensions of patient safety are discussed in various nursing courses. Educational institutions also need to prepare the time and content of patient safety education materials that need to be expanded (17) including for implementation in the clinical area (18). This makes the integration of education with clinics which will further strengthen the achievement of student competencies in implementing patient safety (19).

In curriculum reform (11), it is stated that changes are not entirely determined by external mandates, but these practices develop into the property of the community. It is the community that negotiates meaning at all levels including universities, degree programs, and undergraduate teams and makes decisions according to members' positions, understandings and interests.

The findings of this review also do not show any knowledge management and technology utilization efforts made by educational institutions in achieving patient safety competencies for nursing students. In line with the development of increasingly competitive global competition, knowledge plays an important role in the global economic process. (14) stated that a knowledge management approach can improve the quality of nursing services in hospitals. Nurse performance models in knowledge managment-based patient safety goals can be used as an alternative behavior change intervention for nurses through the mindset of knowledge and caring behavior in improving the performance of nurses in patient safety goals.

The use of information and communication technology has become an effective tool in the health profession and in enhancing the learning process in higher education (20). Especially now that it has entered the era of the 4.0 revolution. The era of the Industrial Revolution 4.0 was a digital revolution marked by the emergence of technological developments (21). The nursing field is one of the sectors that has benefited from the digital era in the Industrial Revolution (22). In the development of management information systems, especially in nursing education, it does not only focus on developing appropriate technology that can be applied permanently

The knowledge that is owned by the organization must be implemented with the support of the use of information technology. Information technology plays an important role in the information distribution process (23). Organizations must be able to design technology to make revolutionary changes in knowledge worker creation, communication, and knowledge management. One example is e-learning (24). Through the adoption of information technology, organizations can increase their ability and strength to develop knowledge, new ideas so that they can produce new findings that provide added value to customers through information obtained from consumers (25).

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